DEPARTMENT OF ENVIRONMENTAL CONSERVATION

AIR QUALITY OPERATING PERMIT

Permit No. 086TVP01 Issue Date: June 20, 2003
Application No. A00086 Expiration Date: July 19, 2008

The Department of Environmental Conservation, under the authority of AS 46.14 and 18 AAC 50, issues an operating permit to the Permittee, **Chugach Electric Association, Inc.**, for the operation of the **Bernice Lake Power Plant**.

This permit satisfies the obligation of the owner and operator to obtain an operating permit as set out in AS 46.14.130(b).

As set out in AS 46.14.120(c), the Permittee shall comply with the terms and conditions of this operating permit.

All facility-specific terms and conditions of Air Quality Control Permit-to-Operate No 9423-AA014 has been incorporated into this Operating Permit.

This Operating Permit becomes effective July 20, 2003

John F. Kuterbach, Manager

Air Permits Program

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List of Abbreviations Used in this Permit

AAC	Alaska Administrative Code
ADEC	Alaska Department of Environmental Conservation
AS	Alaska Statutes
ASTM	American Society for Testing and Materials
BACT	Best Available Control Technology
C.F.R.	Code of Federal Regulations
CO	Carbon Monoxide
dscf	Dry standard cubic foot
EPA	US Environmental Protection Agency
gr./dscf	grain per dry standard cubic foot (1 pound = 7000 grains)
GPH	gallons per hour
HAPs or HACs	Hazardous Air Pollutants or Hazardous Air Contaminants [*HAPs* or *HACs* as defined in AS 46.14.990(14)]
ID	Source Identification Number
kPa	kiloPascals
LAER	Lowest Achievable Emission Rate
MACT	Maximum Achievable Control Technology as defined in 40 C.F.R. 63.
MR&R	Monitoring, Record keeping, and Reporting
NESHAPs	Federal National Emission Standards for Hazardous Air Pollutants [*NESHAPS* as contained in 40 C.F.R. 61 and 63]
NO_X	Nitrogen Oxides
NSPS	Federal New Source Performance Standards [*NSPS* as contained in 40 C.F.R. 60]
O & M	Operation and Maintenance
O_2	Oxygen
PM-10	Particulate Matter less than or equal to a nominal ten microns in diameter
ppm	Parts per million
ppmv, ppmvd	Parts per million by volume on a dry basis
psia	Pounds per Square Inch (absolute)
PSD	Prevention of Significant Deterioration
PTE	Potential to Emit
SIC.	Standard Industrial Classification
SO_2	Sulfur dioxide
TPH	Tons per hour
TPY	Tons per year
VOC	volatile organic compound [*VOC* as defined in 18 AAC 50.990(103)]
VOL	volatile organic liquid [*VOL* as defined in 40 C.F.R. 60.111b, Subpart Kb]
vol%	volume percent
wt%	weight percent

Section 1. Identification

Names and Addresses

Permittee:	**Chugach Electric Association, Inc.** P.O. Box 196300 Anchorage, Alaska 99519-6300
Facility Name:	**Bernice Lake Power Plant**
Location:	Section 16, Township 7N, Range 12W
Physical Address:	Mile 22.5 Kenai Spur Road, Nikiski, Alaska, Seward Meridian
Owner:	Chugach Electric Association, Inc. P.O. Box 196300 Anchorage, Alaska 99519-6300
Operator:	Same as Owner
Permittee's Responsible Official	Carl H. Harmon, Environmental Engineering Manager
Designated Agent:	Evan J. Griffith Chugach Electric Association, Inc.
Facility and Building Contact:	Burke Wick, P.E. Chugach Electric Association, Inc. (907) 762-4779
Fee Contact:	Carl H. Harmon Carl_Harmon@chugachelectric.com

Facility Process Description

SIC Code of the Facility: 4911 - Electric Services

[18 AAC 50.350(b)(1), 1/18/97]

Section 2. General Emission Information

[18 AAC 50.350(b)(1), 1/18/97]

Emissions of Regulated Air Contaminants, as provided in the Permittee's application:

Nitrogen oxides (NOx), carbon monoxide (CO), sulfur oxides (SOx), particulate matter (PM-10), volatile organic compounds (VOCs), and hazardous air pollutants (HAPs).

Facility Classifications:

(1) 18 AAC 50.300(b)(2)

(2) 18 AAC 50.300(c)(1)

Operating Permit Classifications:

(1) 18 AAC 50.325(b)(1)

(2) 18 AAC 50.325(b)(3)

(3) 18 AAC 50.325(c)

Section 3. Source Inventory and Description

[18 AAC 50.350(d)(2), 1/18/97]

Sources listed in Table 1 have specific monitoring, record keeping, or reporting conditions in this permit. Source descriptions and ratings are given for identification purposes only.

Table 1 - Source Inventory

ID	Source Name	Source Description	Rating/size	Installation Date
1	GE Frame 5 Turbine Model M	Generating Unit No. 2	263 MMBtu/hr	1971
2	GE Frame 5 Turbine Model PG5341	Generating Unit No. 3	324.5 MMBtu/hr	1978
3	GE Frame 5 Turbine Model PG5341	Generating Unit No. 4	324.5 MMBtu/hr	1982

Section 4. Emission Fees

1. Assessable Emissions. The Permittee shall pay to the Department an annual emission fee based on the facility's assessable emissions as determined by the Department under 18 AAC 50.410. The assessable emission fee rate is set out in 18 AAC 50.410(b). The Department will assess fees per ton of each air contaminants that the facility emits or has the potential to emit in quantities greater than 10 tons per year. The quantity for which fees will be assessed is the lesser of

1.1 the facility's assessable potential to emit of 1761 TPY; or

1.2 the facility's projected annual rate of emissions that will occur from July 1 to the following June 30, based upon actual annual emissions emitted during the most recent calendar year or another 12 month period approved in writing by the Department, when demonstrated by

a. an enforceable test method described in 18 AAC 50.220;

b. material balance calculations;

c. emission factors from EPA's publication AP-42, Vol. I, adopted by reference in 18 AAC 50.035; or

d. other methods and calculations approved by the Department.

[18 AAC 50.346(a)(1), 5/3/02 and 18 AAC 50.350(c) & 50.400 – 50.420, 1/18/97]

2. Assessable Emission Estimates. Emission fees will be assessed as follows:

2.1 no later than March 31 of each year, the Permittee may submit an estimate of the facility's assessable emissions to ADEC, Air Permits Program, ATTN: Assessable Emissions Estimate, 410 Willoughby Ave., Juneau, AK 99801-1795**;** the submittal must include all of the assumptions and calculations used to estimate the assessable emissions in sufficient detail so the Department can verify the estimates; or

2.2 If no estimate is received on or before March 31 of each year, emission fees for the next fiscal year will be based on the potential to emit set forth in condition 1.1.

[18 AAC 50.346(a)(1), 5/3/02 and 18 AAC 50.350(c) & 50.400 – 50.420, 1/18/97]

Section 5. Source-Specific Requirements

Fuel-Burning Equipment

3. Visible Emissions. The Permittee shall not cause or allow visible emissions, excluding condensed water vapor, emitted from Source ID(s) 1 - 3 listed in Table 1 to reduce visibility through the exhaust effluent by any of the following:

a. more than 20 percent for a total of more than three minutes in any one hour[1];

[18 AAC 50.055(a)(1), 1/18/97 and 18 AAC 50.350(d)(1)(D), 6/21/98]
[40 C.F.R. 52.70, 7/01/01]

b. more than 20 percent averaged over any six consecutive minutes[2].

[18 AAC 50.055(a)(1) & 50.346(c), 5/3/02 and 18 AAC 50.350(d)(1)(C), 6/21/98]

3.1 For Source ID(s) 1 - 3, burn only gas as fuel. Monitoring for these sources shall consist of a certification in each operating report under condition 47 that each of these sources fired only gas. Report under condition 45 if any fuel is burned other than gas.

[18 AAC 50.350(g) - (i) & 50.346(c), 5/3/02]

4. Particulate Matter. The Permittee shall not cause or allow particulate matter emitted from Source ID(s) 1 – 3 listed in Table 1 to exceed 0.05 grains per cubic foot of exhaust gas corrected to standard conditions and averaged over three hours.

[18 AAC 50.346(c), 5/3/02; 18 AAC 50.055(b)(1), 1/18/97and 18 AAC 50.350(d)(1)(C), 6/21/98]

4.1 For Source ID(s) 1 – 3, burn only gas as fuel. Monitoring for these sources shall consist of a certification in each operating report under condition 47 that each of these sources fired only gas. Report under condition 45 if any fuel is burned other than gas.

[18 AAC 50.346(c) & 50.350(g) – (i), 5/3/02]

5. Sulfur Compound Emissions. In accordance with 18 AAC 50.055(c), the Permittee shall not cause or allow sulfur compound emissions, expressed as SO_2, from Source ID(s) 1-3 to exceed 500 ppm averaged over three hours.

[18 AAC 50.346(c), 5/3/02; 18 AAC 50.055(c), 1/18/97; and 18 AAC 50.350(d)(1)(C), 6/21/98]

5.1 Monitoring – The Permittee shall monitor sulfur of the natural gas at least semiannually as follows:

a. Determine the sulfur content of the fuel using test methods listed in 40 C.F.R. 60.17

[1] For purposes of this permit, the "more than three minutes in any one hour" criterion in this condition and conditions 3.a and 18.1 will no longer be effective when the Air Quality Control (18 AAC 50) regulation package effective 5/3/02 is adopted by the U.S. EPA.

[2] The six-minute average standard is enforceable only by the state until 18 AAC 50.055(a)(1), dated May 3, 2002, is approved by EPA into the SIP at which time this standard becomes federally enforceable.

b. The fuel sulfur analysis may be performed by the Permittee, a service contractor retained by the Permittee, by the fuel supplier, or any other qualified agency.

5.2 Recordkeeping:

a. The Permittee shall maintain records of all sulfur monitoring data.

b. All records shall be maintained in accordance with Condition 44.

5.3 Reporting -

a. Report under condition 47 the results of all fuel sulfur monitoring performed during the reporting period.

b. Report as excess emissions, in accordance with condition 45, whenever the fuel combusted causes sulfur compound emissions to exceed the standard of condition 5.

[18 AAC 50.350(i), 1/18/97]

6. The Permittee shall burn only natural gas in Source ID(s) 1 - 3, except that distillate oil may be used in the starter motor.

[Operating Permit No. 9423-AA014, amended 4/25/95]

6.1 The Permittee shall certify in each operating report required under condition 47 that the sources burned only natural gas, except as provided in Condition 6.

[18 AAC 50.350(h), 1/18/97]

6.2 Report under condition 45 if any fuel is burned other than natural gas, or distillate oil used in the starter motor.

[18 AAC 50.350(i), 1/18/97]

7. The Permittee shall install, operate, and maintain in good working order gas consumption meters on each of Source ID(s) 1 - 3. The meters shall have an accuracy of ± 5%.

[Operating Permit No. 9423-AA014, amended 4/25/95]

7.1 Monitoring and Recordkeeping - Record quantity of natural gas consumed in each Source ID(s) 1 - 3, in million cubic feet per month.

[18 AAC 50.350(h), 1/18/97]

7.2 Reporting – Include monthly summaries of the records required by condition 7.1 with the facility operating report required by condition 47.

[18 AAC 50.350(i), 1/18/97]

8. The Permittee shall install, operate, and maintain in good working order a continuous system for measuring kilowatt-hours and hours of operation on each Source ID(s) 1 - 3.

[Operating Permit No. 9423-AA014, amended 4/25/95]

8.1 Monitoring and Recordkeeping – Monitor and record for each Source ID(s) 1 - 3, the following:

a. the number of hours operated per month;

b. maximum one hour kilowatt/hour production per month;

c. total power generated (kilowatt/hour) per month; and

d. year-to-date total for each turbine.

[18 AAC 50.350(g - h), 1/18/97]

8.2 Reporting – Include monthly summaries of the records required by condition 8.1 with the facility operating report required by condition 47.

[18 AAC 50.350(i), 1/18/97]

9. The Permittee shall not allow particulate matter from Source IDs 2 & 3 to exceed the following:

a. 12 lbs/hr per source

b. 48.2 tons/year per source

[Operating Permit No. 9423-AA014, amended 4/25/95]
[PSD Permit No. PSD-X83-02]
[PSD Permit No. PSD-X82-07]

9.1 Compliance with condition 6 shall demonstrate compliance with this condition.

9.2 Report under condition 45 any occurrence of emissions in excess of the limit specified in condition 9.

[18 AAC 50.350(i), 1/18/97]

10. The Permittee shall not allow Nitrogen Oxides emissions from Source IDs 2 & 3 to exceed:

b. 130.0 lb/hour per source

c. 569 tons/year per source

[Operating Permit No. 9423-AA014, amended 4/25/95]
[PSD Permit No. PSD-X83-02]
[PSD Permit No. PSD-X82-07]

10.1 The Permittee shall conduct source testing in accordance with Condition 15.1b and Section 8 to ensure compliance with the NOx BACT limits in Condition 10.

10.2 Report results of source testing required by Condition 10.1 in accordance with Condition 39.

10.3 Report under condition 45 any occurrence of emissions in excess of the limit specified in condition 10.

[18 AAC 50.350(g) – (i), 1/18/97]

Sources Subject to Federal New Source Performance Standards (NSPS), Subpart A

11. NSPS Subpart A Startup, Shutdown, & Malfunction Requirements. The Permittee shall maintain records of the occurrence and duration of any start-up, shutdown, or malfunction in the operation of Source ID(s) 2 & 3, any malfunctions of associated air-pollution control equipment, or any periods during which a continuous monitoring system or monitoring device for Source ID(s) 2 & 3 is inoperative.

[18 AAC 50.350(h), 5/3/02 & 18 AAC 50.040(a)(1), 8/15/02]
[40 C.F.R. 60.7(b), Subpart A, 7/1/01]

12. NSPS Subpart A Good Air Pollution Control Practice. At all times, including periods of startup, shutdown, and malfunction, the Permittee shall, to the extent practicable, maintain and operate Source ID(s) 2 & 3 including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions. The Department will determine whether acceptable operating and maintenance procedures are being used based on information available to the Department which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance records, and inspections of Source ID(s) 2 & 3.

[18 AAC 50.040(a)(1), 8/15/02]
[40 C.F.R. 60.11(d), Subpart A, 7/1/01]

13. NSPS Subpart A Credible Evidence. For the purpose of submitting compliance certifications or establishing whether or not the Permittee has violated or is in violation of the standards set forth in conditions 15 & 16, nothing in 40 CFR Part 60 shall preclude the use, including the exclusive use, of any credible evidence or information, relevant to whether Source ID(s) 2 & 3 would have been in compliance with applicable requirements of 40 CFR Part 60 if the appropriate performance or compliance test or procedure had been performed.

[18 AAC 50.040(a)(1); 8/15/02]
[40 C.F.R. 60.11(g), Subpart A, 7/1/01]

14. NSPS Subpart A Concealment of Emissions. The Permittee shall not build, erect, install, or use any article, machine, equipment or process, the use of which conceals an emission which would otherwise constitute a violation of a standard set forth in condition 15 & 16. Such concealment includes, but is not limited to, the use of gaseous diluents to achieve compliance with an opacity standard or with a standard that is based on the concentration of a pollutant in the gases discharged to the atmosphere.

[18 AAC 50.040(a)(1), 8/15/02]
[40 C.F.R. 60.12, Subpart A, 7/1/01]

Turbines Subject to NSPS Subpart GG, Source ID(s) 2 & 3

15. NSPS Subpart GG NO_X Standard. The Permittee shall not allow the exhaust gas concentration of NO_X from Source ID(s) 2 & 3 to exceed 84 ppmv at 15 percent O_2 dry exhaust basis, except during startup, shutdown, and malfunction periods.

[18 AAC 50.040(a)(2)(V), 8/15/02]
[40 C.F.R. 60.332(a)(1), Subpart GG, 7/1/01]
[40 C.F.R. 60.8(c), 7/1/01]

15.1 **Monitoring.**

a. Prior to completion of the NOx source test on Source ID 3 required by Condition 15.1b, the Permittee shall not allow the operating load on Generating Unit 4, Source ID 3, to exceed an average of 23.5 MW during any clock hour. This Condition 15.1a shall terminate upon submission of a source test report showing that Source ID 3 complies with the NOx emission limit in Condition 15 at maximum load. If a source test shows non-compliance with the Condition 15 NOx limit at maximum load, the Permittee shall project the highest hourly average load at which turbine emissions will comply with the Condition 15 limit, and the Permittee shall operate Source ID 3 at or below that load until the Permittee submits a source test report showing compliance with the NOx emission limit in Condition 15 at a higher hourly average load.

(i) Monitor the hourly average turbine load during each clock hour of operation of Source ID 3.

(ii) Maintain a record of the maximum hourly average load recorded for Source ID 3 during each calendar day.

(iii) Report in accordance with condition 45 each day that the hourly average load on Source ID 3 exceeds 23.5MW during one or more clock hours. State in the report if the exceedance occurred during a start-up, shutdown, or malfunction event.

b. **Periodic Testing**.

(i) **Initial Periodic Testing.** For each turbine subject to condition 15 that operates for 400 hours or more in any 12 month period during the life of this permit, the Permittee shall satisfy either condition 15.1b(i)(A) or 15.1b(i)(B).

(A) For existing turbines not represented by emission data described in condition 15.1b(i)(B), the Permittee shall conduct a NO_x and O_2 source test under 40 C.F.R. 60, Appendix A-7, Method 20 within three years after issuance of this permit

(i) for each turbine, or

(ii) on one turbine to represent a group of turbines, if allowed to do so under condition 15.1c.

(B) If a test following 40 C.F.R. 60, Appendix A-7, Method 20 or following another protocol approved by the Department has been conducted on a turbine within two years before the issuance date of this permit, and the test shows that emissions at maximum load are less than 90 percent of the emission limit in condition 15, then

(i) the Permittee may use those test results to represent emissions from that turbine or for a group of turbines if allowed under condition 15.1c until the testing of condition 15.1b(i)(B)(ii) is performed; and

(ii) the Permittee shall conduct a Method 20 test on each turbine, or on one of a group of turbines as allowed under condition 15.1c, within the 5 years of the permit term.

(ii) **Higher Tier Testing.** For each turbine with test results under condition 15.1b(i) that are 90 percent or more of the emission limit of condition 15, or for which emissions will equal or exceed 90 percent of the emission limit at maximum load, as shown through condition 15.1d , the Permittee shall conduct an additional Method 20 test for the turbine within one year of the test under condition 15.1b(i). The Permittee shall conduct at least one additional test per year until at least two consecutive tests show that emissions for the turbine are less than 90 percent of the limit at loads up to maximum load.

(iii) **Test Methods.** In conducting any source test required by Condition 15 the Permittee may employ fixed sample extraction tubes (the 'rack' method) as an alternative to the sample probe configuration described in EPA Methods 1 and 2. The rack design shall conform to the EMTIC Guideline Document GD-031, Evaluation procedure for Multi-Hole Sample Probes. Final probe design specifications shall be submitted with the source test report required by condition 39. The Permittee may use fuel-specific F factors for Method 20 tests.

[Operating Permit No. 9423-AA014, amended 4/25/95]

c. **Substituting Test Data.** The Permittee may use a Method 20 test under conditions 15.1b(i) or 15.1b(ii) performed on only one of a group of turbines to satisfy the requirements of those conditions for the other turbines in the group if

(i) the Permittee demonstrates that test results are less than 90 percent of the emission limit of condition 15, and are projected under condition 15.1d to be less than 90 percent of the limit at maximum load;

(ii) for any source test done after the issuance date of this permit, the Permittee identifies in a source test plan under condition 37

(A) the turbine to be tested;

(B) the other turbines in the group that are to be represented by the test; and

(C) why the turbine to be tested is representative, including that each turbine in the group

(i) is located at a facility operated and maintained by the Permittee;

(ii) is the same make and family and has the same injector and combustor designs;

(iii) uses the same fuel type; and

(iii) for any source test done before the issuance date of this permit and used under condition 15.1b(i)(B), the Permittee

(A) demonstrates why the test results are representative of emissions from the entire group of turbines, including that each turbine in the group

(i) is located at a facility operated and maintained by the Permittee;

(ii) is the same make and model and has identical injectors and combustor;

(iii) uses the same fuel type; and

(B) submits all results of source testing that has been performed on each turbine in the group, regardless of the date of the test, and certifies that the submittal is complete, consistent with 18 AAC 50.205.

d. **Load**

(i) The Permittee shall conduct all tests under condition 15.1b in accordance with 40 C.F.R. 60.335(c)(3), except as otherwise approved in writing by the Department, or by EPA if the circumstances at the time of the EPA approval are still valid. For the highest load condition, if it is not possible to operate the turbine during the test at maximum load, the Permittee will test the turbine when operating at the highest load achievable by the turbine under the ambient and facility operating conditions in effect at the time of the test.

(ii) The Permittee shall demonstrate in the source test plan for any test performed after the issue date of this permit whether the test is scheduled when maximum NO_x emissions are expected.

(iii) If the highest operating rate tested is less than the maximum load of the tested turbine or another turbine represented by the test data,

(A) for each such turbine the Permittee shall provide to the Department as an attachment to the source test report

(i) additional test information from the manufacturer or from previous testing of units in the group of turbines; if using previous testing of the group of turbines, the information must include all available test data for the turbines in the group, and

(ii) a demonstration based on the additional test information that projects the test results from condition 15.1b to predict the highest load at which emissions will comply with the limit in condition 15;

(B) the Permittee shall not operate any turbine represented by the test data at loads for which the Permittee's demonstration predicts that emissions will exceed the limit of condition 15;

(C) the Permittee shall comply with a written finding prepared by the Department that

(i) the information is inadequate for the Department to reasonably conclude that compliance is assured at any load greater than the test load, and that the Permittee must not exceed the test load;

(ii) the highest load at which the information is adequate for the Department to reasonably conclude that compliance assured is less than maximum load, and the Permittee must not exceed the highest load at which compliance is predicted, or

(iii) the Permittee must retest during a period of greater expected demand on the turbine; and

(D) the Permittee may revise a load limit by submitting results of a more recent Method 20 test done at a higher load, and, if necessary, the accompanying information and demonstration described in condition 15.1d(iii)(A); the new limit is subject to any new Department finding under condition 15.1d(iii)(C)and

(iv) In order to perform a Method 20 emission test, the Permittee may operate a turbine at a higher load than that prescribed by condition 15.1d(iii).

(v) For the purposes of conditions 15.1 through 15.3, maximum load means the hourly average load that is the smallest of

(A) 100 percent of manufacturer's design capacity of the gas turbine at ISO standard day conditions;

(B) the highest load allowed by an enforceable condition that applies to the turbine; or

(C) the highest load possible considering permanent physical restraints on the turbine or the equipment which it powers.

15.2 **Record keeping**.

a. The Permittee shall comply with the following for each turbine for which a demonstration under condition 15.1d(iii) does not show compliance with the limit of condition 15 at maximum load.

(i) The Permittee shall keep records of

(A) load; or

(B) as approved by the Department, surrogate measurements for load and the method for calculating load from those measurements.

(ii) Records in condition 15.2a shall be hourly or otherwise as approved by the Department.

(iii) Within one month after submitting a demonstration under condition 15.1d(iii)(A)(ii) that predicts that the highest load at which emissions will comply is less than maximum load, or within one month of a Department finding under condition 15.1d(iii)(C), whichever is earlier, the Permittee shall propose to the Department how they will measure load or load surrogates, and shall propose and comply with a schedule for installing any necessary equipment and beginning monitoring. The Permittee shall comply with any subsequent Department direction on the load monitoring methods, equipment, or schedule.

b. For any turbine subject to condition 15, that will operate less than 400 hours in any 12 consecutive months, keep monthly records of the hours of operation. If a turbine that normally operates less than 400 hours exceeds that total during any 12 month period,

(i) test according to condition 15.1b; or

(ii) if it is no longer possible to meet that schedule, test within one year of exceeding 400 hours in 12 consecutive months.

15.3 **Reporting**.

a. In each facility operating report under condition 47 the Permittee shall list for each turbine tested or represented by testing at less than maximum load and for which the Permittee must limit load under condition 15.1d(iii)

(i) the load limit;

(ii) the turbine identification; and

(iii) the highest load recorded under condition 15.2a during the period covered by the operating report.

b. In each facility operating report under condition 47 for each turbine for which condition 15.1b has not been satisfied because the turbine normally operates less than 400 hours in any 12 months, the Permittee shall identify

(i) the turbine;

(ii) the highest number of operating hours for any 12 months ending during the period covered by the report; and

(iii) any turbine that operated for 400 or more hours.

c. The Permittee shall report under condition 45 if

(i) a test result exceeds the emission standard;

(ii) Method 20 testing is required under condition 15.1b or 15.2b but not performed, or

(iii) the turbine was operated at a load exceeding that allowed by conditions 15.1d(iii)(B) and 15.1d(iii)(C); exceeding a load limit is deemed a single violation rather than a multiple violation of both monitoring and the underlying emission limit.

[18 AAC 50.350(g) - (i), 5/3/02, 50.220(a) - (c), 1/18/97, & 50.040(a)(1), 8/15/02]
[40 CFR 60.8(b), Subpart A, 7/1/01]

16. NSPS Subpart GG Sulfur Standard. The Permittee shall not allow the sulfur content for the fuel burned in Source ID(s) 2 & 3 to exceed 0.8 percent by weight.

[18 AAC 50.040(a)(2)(V), 8/15/02]
[40 C.F.R. 60.333(b), Subpart GG, 7/1/01]

16.1 Monitoring – The Permittee shall monitor sulfur of the natural gas at least semiannually as follows:

a. Determine the sulfur content of the fuel using methods described in 40 CFR 60.17.

[EPA Alternative Monitoring Plan, 02/05/97]

b. The fuel sulfur analysis required under condition 16.1 may be performed by the Permittee, a service contractor retained by the Permittee, by the fuel supplier, or any other qualified agency.

16.2 Recordkeeping:

a. The Permittee shall maintain records of all sulfur monitoring data.

b. The Permittee shall maintain a record documenting a constant supplier or source of fuel. A substantial change in fuel quality shall be considered as a change in fuel supply.

c. The Permittee shall maintain a record of all turbine operation on fuels other than pipeline quality natural gas.

d. All records shall be maintained on-site for a period of 5 years from the generation of such record.

16.3 Reporting – Submit to the Department and EPA as follows:

a. The Permittee shall annually report results of all sulfur monitoring.

b. The Permittee shall report any changes in supplier or source of fuel within 60 days of such a change.

c. The Permittee shall report use of any fuel other than pipeline quality natural gas within 60 days of such use.

[EPA Alternative Monitoring Plan, 2/5/97]
[18 AAC 50.350(j), 1/18/97]

Section 6. Insignificant Sources

This section contains the requirements that the Permittee identified under 18 AAC 50.335(q)(2) as applicable to insignificant sources at the facility. This section also specifies the testing, monitoring, recordkeeping, and reporting for insignificant sources that the Department finds necessary to ensure compliance with the applicable requirements. Insignificant sources are not exempted from any air quality control requirement or federally enforceable requirement.

As set out in 18 AAC 50.350(m), the shield of AS 46.14.290 does not apply to these sources.

17. For sources at the facility that are insignificant as defined in 18 AAC 50.335(q)-(v) that are not listed in this permit, the following apply:

17.1 The Permittee shall submit the compliance certifications of condition 48 based on reasonable inquiry;

17.2 The Permittee shall comply with the requirements of condition 28;

17.3 The Permittee shall report in the operating report required by condition 47 if a source is insignificant because of actual emissions less than the thresholds of 18 AAC 50.335(r) and actual emissions become greater than any of those thresholds;

17.4 No other monitoring, recordkeeping or reporting is required.

[18 AAC 50.346(b)(1), 5/3/02]

18. The Permittee shall not cause or allow visible emissions, excluding condensed water vapor, emitted from an industrial process or fuel-burning equipment, to reduce visibility through the exhaust effluent by any of the following:

18.1 more than 20 percent for a total of more than three minutes in any one hour[3];

[18 AAC 50.050(a)(2) & 50.055(a)(1), 1/18/97]
[40 C.F.R. 52.70, 7/01/01]

18.2 more than 20 percent averaged over any six consecutive minutes[4].

[18 AAC 50.050(a) & 50.055(a)(1), 5/3/02]

19. The Permittee shall not cause or allow particulate matter emitted from an industrial process or fuel-burning equipment to exceed 0.05 grains per cubic foot of exhaust gas corrected to standard conditions and averaged over three hours.

[18 AAC 50.055(b)(1), 1/18/97]

20. The Permittee shall not cause or allow sulfur compound emissions, expressed as SO_2, from an industrial process or fuel-burning equipment, to exceed 500 ppm averaged over three hours.

[18 AAC 50.055(c), 1/18/97]

[3] See Footnote 1.
[4] See Footnote 2.

Section 7. Generally Applicable Requirements

21. Asbestos NESHAP. The Permittee shall comply with the requirements set forth in 40 C.F.R. 61.145, 61.150, and 61.152, Subpart M, and the applicable sections set forth in 40 C.F.R. 61, Subpart A and Appendix A.

[18 AAC 50.040(b)(3), 8/15/02 & 50.350(d)(1)(A), 1/18/97]
[40 C.F.R. 61, Subparts A & M, and Appendix A, 7/1/01]

22. Refrigerant Recycling and Disposal. The Permittee shall comply with the standards for recycling and emission reduction of refrigerants, and Halon set forth in 40 C.F.R. 82, Subparts F and G.

[18 AAC 50.040(d), 8/15/02 & 50.350(d)(1)(A), 1/18/97]
[40 C.F.R. 82, Subpart F, 7/1/01]

23. Good Air Pollution Control Practice. The Permittee shall do the following for Source ID 1:

a. Perform regular maintenance considering the manufacturer's or the operator's maintenance procedures;

b. Keep records of any maintenance that would have a significant effect on emissions; the records may be kept in electronic format;

c. Keep a copy of either the manufacturer's or the operator's maintenance procedures.

[18 AAC 50.030 & 50.346(b)(2), 5/3/02 & 18 AAC 50.350(f)(2) & (3), 1/18/97]

24. Dilution. The Permittee shall not dilute emissions with air to comply with this permit.

[18 AAC 50.045(a), 1/18/97]

25. Reasonable Precautions to Prevent Fugitive Dust. A person who causes or permits bulk materials to be handled, transported, or stored, or who engages in an industrial activity or construction project shall take reasonable precautions to prevent particulate matter from being emitted into the ambient air.

[18 AAC 50.346(c), 5/3/02; 18 AAC 50.045(d) & 50.350(g), 1/18/97 & 18 AAC 50.040(e), 8/15/02]
[18 AAC 50.350(i), 5/3/02]

26. Stack Injection. The Permittee shall not release materials other than process emissions, products of combustion, or materials introduced to control pollutant emissions from a stack at a source constructed or modified after November 1, 1982, unless approved in writing by the Department.

[18 AAC 50.055(g), 1/18/97]

27. Open Burning. The Permittee shall comply with the following requirements when conducting open burning at the facility:

[Open Burn Approval # Y012-SC043, 8/31/01]

27.1 The Permittee shall burn only uncontaminated diesel and gasoline mixtures for purposes of fire training.

27.2 Open burning outside the lined training pits requires prior verbal approval from the DEC Air Quality office, telephone 1-907-269-3066.

27.3 Any excess wastewater which will not be contained within the liner shall be disposed of in accordance with 18 AAC 72.

27.4 Hazardous material and waste oil other than the hydrocarbons approved shall not be allowed in the burn. Spill cleanup equipment shall be on-site and any spill shall be cleaned up and reported to the DEC. (18 AAC 75.300-307).

27.5 **Notification** (more than 20 gallons per session): The DEC shall be notified at least one day in advance of any planned burn of more than 20 gallons, telephone 1-907-269-3066. Your local FAA office and/or the Control Tower should be notified (if necessary), as well as local fire department(s). Public notification shall occur through the local news media (if present) at least three days prior to the burn (18 AAC 50.065(j)), so that each advertisement shall have:

a. Permittee or other contact name

b. Contact's telephone number

c. Location of the burn

d. Type and approximate amount of fuel being burned

27.6 Each series of burning occurrences must not exceed two hours of total burn time and must be separated by one hour, otherwise a burn schedule must be submitted.

27.7 Burning shall not be done during stagnant air conditions (fogs or inversions).

27.8 The burning shall comply with all local ordinances. This open burn approval does not exempt the activity from any other permit requirements. Please contact local authorities for more information.

27.9 Permittee shall submit an annual report to DEC due one month after the end of the calendar year. The report shall include the following information about each training session:

a. Date of the training session

b. Number of trainees

c. Total burn time (for each session)

d. Type of fuel used

e. The gallons of fuel used

f. Visual description of smoke transport and dispersal conditions, with approximate wind speed and direction.

g. List of complaints received concerning excess odors or smoke (if any), including name, phone number of complainant and any corrective action taken by the training facility (18 AAC 50.065(k)).

[Open Burn Approval # Y012-SC043, 8/31/01]
[18 AAC 50.065, 1/18/97& 50.350(g) – (h), 5/3/02]

28. Air Pollution Prohibited. No person may permit any emission which is injurious to human health or welfare, animal or plant life, or property, or which would unreasonably interfere with the enjoyment of life or property.

[18 AAC 50.346(a)(2), 5/3/02; 18 AAC 50.110, 5/26/72; 18 AAC 50.040(e), 8/15/02]

28.1 If emissions present a potential threat to human health or safety, the Permittee shall report any such emissions according to condition 45.

28.2 As soon as practicable after becoming aware of a complaint that is attributable to emissions from the facility, the Permittee shall investigate the complaint to identify emissions that the Permittee believes have caused or are causing a violation of condition 28.

28.3 The Permittee shall initiate and complete corrective action necessary to eliminate any violation identified by a complaint or investigation as soon as practicable if

a. after an investigation because of a complaint or other reason, the Permittee believes that emissions from the facility have caused or are causing a violation of condition 28; or

b. the Department notifies the Permittee that it has found a violation of condition 28.

28.4 The Permittee shall keep records of

a. the date, time, and nature of all emissions complaints received;

b. the name of the person or persons that complained, if known;

c. a summary of any investigation, including reasons the Permittee does or does not believe the emissions have caused a violation of condition 28; and

d. any corrective actions taken or planned for complaints attributable to emissions from the facility.

28.5 With each facility operating report under condition 47, the Permittee shall include a brief summary report which must include

a. the number of complaints received;

b. the number of times the Permittee or the Department found corrective action necessary;

c. the number of times action was taken on a complaint within 24 hours; and

d. the status of corrective actions the Permittee or Department found necessary that were not taken within 24 hours.

28.6 The Permittee shall notify the Department of a complaint that is attributable to emissions from the facility within 24 hours after receiving the complaint, unless the Permittee has initiated corrective action within 24 hours of receiving the complaint.

[18 AAC 50.346(a)(2) & 50.350(g) - (i), 5/3/02]

29. Technology-Based Emission Standard. If an unavoidable emergency, malfunction, or non-routine repair, as defined in 18 AAC 50.235, causes emissions in excess of a technology-based emission standard[5], the Permittee shall take all reasonable steps to minimize levels of emissions that exceed the standard. Excess emissions reporting under condition 45 requires information on the steps taken to minimize emissions. Monitoring of compliance for this condition consists of the report required under condition 45.

[18 AAC 50.235(a) & 50.350(f)(3), 1/18/97]

30. Permit Renewal. To renew this permit, the Permittee shall submit an application under 18 AAC 50.335 no sooner than **January 19, 2007** and no later than **January 19, 2008.**

[18 AAC 50.335(a), 1/18/97]

[5] *Technology-based emission standard* means a best available control technology standard (BACT); a lowest achievable emission rate standard (LAER); a maximum achievable control technology standard established 40 C.F.R. 63, Subpart B, adopted by reference in 18 AAC 50.040(c); a standard adopted by reference in 18 AAC 50.040(a) or (c); and any other similar standard for which the stringency of the standard is based on determinations of what is technologically feasible, considering relevant factors.

Section 8. General Source Testing and Monitoring Requirements

31. Requested Source Tests. In addition to any source testing explicitly required by the permit, the Permittee shall conduct source testing as requested by the Department to determine compliance with applicable permit requirements.

[18 AAC 50.220(a), 1/18/97 & 18 AAC 50.345(a) & (k), 5/3/02]

32. Operating Conditions. Unless otherwise specified by an applicable requirement or test method, the Permittee shall conduct source testing

[18 AAC 50.220(b) & 50.350(g), 1/18/97]

32.1 at a point or points that characterize the actual discharge into the ambient air; and

32.2 at the maximum rated burning or operating capacity of the source or another rate determined by the Department to characterize the actual discharge into the ambient air.

33. Reference Test Methods. The Permittee shall use the following as reference test methods when conducting source testing for compliance with this permit, except as otherwise stated in this permit:

33.1 Source testing for compliance with requirements adopted by reference in 18 AAC 50.040(a) must be conducted in accordance with the methods and procedures specified in 40 C.F.R. 60.

[18 AAC 50.220(c)(1)(A) & 50.350(g), 1/18/97 & 18 AAC 50.040(a), 8/15/02]
[40 C.F.R. 60, 7/1/01]

33.2 Source testing for compliance with requirements adopted by reference in 18 AAC 50.040(b) must be conducted in accordance with the methods and procedures specified in 40 C.F.R. 61.

[18 AAC 50.040(b), 8/15/02; 50.220(c)(1)(B) & 50.350(g), 1/18/97]
[40 C.F.R. 61, 7/1/01]

33.3 Source testing for compliance with requirements adopted by reference in 18 AAC 50.040(c) must be conducted in accordance with the source test methods and procedures specified in 40 C.F.R. 63.

[18 AAC 50.040(c), 5/3/02; 18 AAC 50.220(c)(1)(C) & 50.350(g), 1/18/97]
[40 C.F.R. 63, 4/5/02]

33.4 Source testing for the reduction in visibility through the exhaust effluent must be conducted in accordance with the procedures set out in Reference Method 9.

[18 AAC 50.030, 5/3/02, 18 AAC 50.220(c)(1)(D) & 50.350(g), 1/18/97]

33.5 Source testing for emissions of total particulate matter, sulfur compounds, nitrogen compounds, carbon monoxide, lead, volatile organic compounds, fluorides, sulfuric acid mist, municipal waste combustor organics, metals, and acid gases must be conducted in accordance with the methods and procedures specified in 40 C.F.R. 60, Appendix A.

[18 AAC 50.040(a)(4), 8/15/02 & 18 AAC 50.220(c)(1)(E) & 50.350(g), 1/18/97]

[40 C.F.R. 60, Appendix A, 7/1/01]

33.6 Source testing for emissions of PM-10 must be conducted in accordance with the procedures specified in 40 C.F.R. 51, Appendix M, Method 201.

[`18 AAC 50.035(b)(2), 7/2/00; 18 AAC 50.220(c)(1)(F) & 50.350(g), 1/18/97]
[40 C.F.R. 51, Appendix M, 7/1/01]

33.7 Source testing for emissions of any contaminant may be determined using an alternative method approved by the Department in accordance with 40 C.F.R. 63 Appendix A, Method 301.

[18 AAC 50.040(c)(19), 5/3/02 & 18 AAC 50.220(c)(2) & 50.350(g), 1/18/97]
[40 C.F.R. 63, Appendix A, Method 301, 4/5/02]

34. Excess Air Requirements. To determine compliance with this permit, standard exhaust gas volumes must only include the volume of gases formed from the theoretical combustion of fuel, plus the excess air volume normal for the specific source type, corrected to standard conditions (dry gas at 68° F and an absolute pressure of 760 millimeters of mercury).

[18 AAC 50.220(c)(3), 18 AAC 50.350(g), 1/18/97 & 18 AAC 50.990(88), 5/3/02]

35. Test Exemption. The Permittee is not required to comply with conditions 37, 38 and 39 when the exhaust is observed for visible emissions by EPA Method 9.

[18 AAC 50.345(a), 5/3/02]

36. Test Deadline Extension. The Permittee may request an extension to a source test deadline established by the Department. The Permittee may delay a source test beyond the original deadline only if the extension is approved in writing by the Department's appropriate division director or designee.

[18 AAC 50.345(a) & (l), 5/3/02]

37. Test Plans. Except as provided in condition 35, before conducting any source tests, the Permittee shall submit a plan to the Department. The plan must include the methods and procedures to be used for sampling, testing, and quality assurance and must specify how the source will operate during the test and how the Permittee will document that operation. The Permittee shall submit a complete plan within 60 days after receiving a request under condition 31 and at least 30 days before the scheduled date of any test unless the Department agrees in writing to some other time period. Retesting may be done without resubmitting the plan.

[18 AAC 50.345(a) & (m), 5/3/02]

38. Test Notification. Except as provided in condition 35, at least 10 days before conducting a source test, the Permittee shall give the Department written notice of the date and the time the source test will begin.

[18 AAC 50.345(a) & (n), 5/3/02]

39. Test Reports. Except as provided in condition 35, within 60 days after completing a source test, the Permittee shall submit two copies of the results in the format set out in the *Source Test Report Outline*, adopted by reference in 18 AAC 50.030. The Permittee shall certify the results in the manner set out in condition 41. If requested in writing by the Department, the Permittee must provide preliminary results in a shorter period of time specified by the Department.

[18 AAC 50.345(a) & (o), 5/3/02]

40. Particulate Matter Calculations. In source testing for compliance with the particulate matter standards in conditions 4 and 19, the three-hour average is determined using the average of three one-hour test runs.

[18 AAC 50.220(f) & 50.350(g), 1/18/97]

Section 9. General Recordkeeping, Reporting, and Compliance Certification Requirements

41. Certification. The Permittee shall certify all reports, compliance certifications, or other documents submitted to the Department and required under the permit by including the signature of a responsible official for the permitted facility following the statement: "Based on information and belief formed after reasonable inquiry, I certify that the statements and information in and attached to this document are true, accurate, and complete." Excess emission reports must be certified either upon submittal or with an operating report required for the same reporting period. All other reports and other documents must be certified upon submittal. When certifying a compliance certification, the official's signature must be notarized.

[18 AAC 50.205 and 50.350(b)(3) & (j), 1/18/97; and 18 AAC 50.345(a) & (j), 5/3/02]

42. Submittals. Unless otherwise directed by the Department or this permit, the Permittee shall send two copies of reports, compliance certifications, and other documents required by this permit to ADEC, Air Permits Program, 610 University Ave., Fairbanks, AK 99709-3643, ATTN: Compliance Technician. The Permittee may, upon consultation with the Compliance Technician regarding software compatibility, provide electronic copies of data reports, emission source test reports, or other records under a cover letter certified in accordance with condition 41.

[18 AAC 50.350(i), 1/18/97]

43. Information Requests. The Permittee shall furnish to the Department, within a reasonable time, any information the Department requests in writing to determine whether cause exists to modify, revoke and reissue, or terminate the permit or to determine compliance with the permit. Upon request, the Permittee shall furnish to the Department copies of records required to be kept by the permit. The Department may require the Permittee to furnish copies of those records directly to the federal administrator.

[18 AAC 50.200 & 50.350(b)(3), 1/18/97; and 18 AAC 50.345(a) & (i) & 50.350(g) – (i), 5/3/02]

44. Recordkeeping Requirements. The Permittee shall keep all records required by this permit for at least five years after the date of collection, including:

44.1 copies of all reports and certifications submitted pursuant to this section of the permit; and

44.2 records of all monitoring required by this permit, and information about the monitoring including:

a. calibration and maintenance records, original strip chart or computer-based recordings for continuous monitoring instrumentation;

b. sampling dates and times of sampling or measurements;

c. the operating conditions that existed at the time of sampling or measurement;

d. the date analyses were performed;

e. the location where samples were taken;

f. the company or entity that performed the sampling and analyses;

g. the analytical techniques or methods used in the analyses; and

h. the results of the analyses.

[18 ACC 50.350(h), 5/3/02]

45. Excess Emissions and Permit Deviation Reports.

45.1 Except as provided in condition 28, the Permittee shall report all emissions or operations that exceed or deviate from the requirements of this permit as follows:

a. in accordance with 18 AAC 50.240(c), as soon as possible after the event commenced or is discovered, report

(i) emissions that present a potential threat to human health or safety; and

(ii) excess emissions that the Permittee believes to be unavoidable;

b. in accordance with 18 AAC 50.235(a), within two working days after the event commenced or was discovered, report an unavoidable emergency, malfunction, or nonroutine repair that causes emissions in excess of a technology based emission standard;

c. report all other excess emissions and permit deviations

(i) within 30 days of the end of the month in which the emissions or deviation occurs, except as provided in condition 45.1c(ii);

(ii) if a continuous or recurring excess emissions is not corrected within 48 hours of discovery, within 72 hours of discovery unless the Department provides written permission to report under condition 45.1c(i); and

45.2 When reporting excess emissions, the Permittee must report using either the Department's on-line form, which can be found at http://www.state.ak.us/dec/dawq/aqm/eeform.pdf, or if the Permittee prefers, the form contained in Section 13 of this permit. The Permittee must provide all information called for by the form that is used.

45.3 When reporting a permit deviation, the Permittee must report using either the Department's on-line form, which can be found at http://www.state.ak.us/dec/dawq/aqm/eeform.pdf, or if the Permittee prefers, the form contained in Section 13 of this permit. The Permittee must provide all information called for by the form.

45.4 If requested by the Department, the Permittee shall provide a more detailed written report as requested to follow up an excess emissions report.

[18 AAC 50.235(a)(2), 50.240(c), & 50.350(i), 1/18/97; and 18 AAC 50.346(a)(3), 5/3/02

46. NSPS and NESHAP Reports. The Permittee shall:

46.1 attach to the facility operating report required by condition 47, copies of any NSPS and NESHAPs reports submitted to the U.S. Environmental Protection Agency (EPA) Region 10 as required in this permit; and

46.2 upon request by the Department, notify and provide a written copy of any EPA-granted waiver of the federal emission standards, record keeping, monitoring, performance testing, or reporting requirements, or approved custom monitoring schedules.

[18 AAC 50.040, 8/15/02 & 18 AAC 350(i)(2), 1/18/97]
[40 C.F.R. 60 &. 61, 7/1/01]

47. Operating Reports. During the life of this permit, the Permittee shall submit to the Department one original and one copy of an operating report by August 1 for the period January 1 to June 30 of the current year and by February 1 for the period July 1 to December 31 of the previous year.

47.1 The operating report must include all information required to be in operating reports by other conditions of this permit.

47.2 If excess emissions or permit deviations that occurred during the reporting period are not reported under condition 47.1, either

a. The Permittee shall identify

(i) the date of the deviation;

(ii) the equipment involved;

(iii) the permit condition affected;

(iv) a description of the excess emissions or permit deviation; and

(v) any corrective action or preventive measures taken and the date of such actions; or

b. When excess emissions or permit deviations have already been reported under condition 45 the Permittee may cite the date or dates of those reports.

[18 AAC 50. 346(b)(3), 5/3/02; 18 AAC 50.350(d)(4), 6/21/98 and 18 AAC 50.350(f)(3) & (i), 1/18/97]

48. Annual Compliance Certification. Each year by March 31, the Permittee shall compile and submit to the Department one original and one copy of an annual compliance certification report as follows:

[18 AAC 50.350(j), 1/18/97]

48.1 For each permit term and condition set forth in Section 3 through Section 9, including terms and conditions for monitoring, reporting, and recordkeeping:

[18 AAC 50.350(d)(4), 6/21/98]

a. certify the compliance status over the preceding calendar year consistent with the monitoring required by this permit;

b. state whether compliance is intermittent or continuous;

c. briefly describe each method used todetermine the compliance status; and

d. notarize the responsible official's signature.

[18 AAC 50.205, 1/18/97 & 50.345(a) & (j), 5/3/02]

48.2 In addition, submit a copy of the report directly to the EPA-Region 10, Office of Air Quality, M/S OAQ-107, 1200 Sixth Avenue, Seattle, WA 98101.

[18 AAC 50.350(j), 1/18/97]

Section 10. Standard Conditions Not Otherwise Included in the Permit

49. The Permittee must comply with each permit term and condition. Noncompliance with a permit term or condition constitutes a violation of AS 46.14, 18 AAC 50, and, except for those terms or conditions designated in the permit as not federally enforceable, the Clean Air Act, and is grounds for

49.1 an enforcement action;

49.2 permit termination, revocation and reissuance, or modification in accordance with AS 46.14.280; or

49.3 denial of an operating permit renewal application.

[18 AAC 50.350(b)(3), 1/18/97 & 18 AAC 50.345(a) & (c), 5/3/02]

50. It is not a defense in an enforcement action to claim that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with a permit term or condition.

[18 AAC 50.350(b)(3), 1/18/97 & 18 AAC 50.345(a) & (d), 5/3/02]

51. Each permit term and condition is independent of the permit as a whole and remains valid regardless of a challenge to any other part of the permit.

[18 AAC 50.350(b)(3), 1/18/97 & 18 AAC 50.345(a) & (e), 5/3/02]

52. Compliance with permit terms and conditions is considered to be compliance with those requirements that are

52.1 included and specifically identified in the permit; or

52.2 determined in writing in the permit to be inapplicable.

[18 AAC 50.350(b)(3), 1/18/97 & 18 AAC 50.345(a) & (b), 5/3/02]

53. The permit may be modified, reopened, revoked and reissued, or terminated for cause. A request by the Permittee for modification, revocation and reissuance, or termination or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

[18 AAC 50.350(b)(3), 1/18/97 & 18 AAC 50.345(a) & (f), 5/3/02]

54. The permit does not convey any property rights of any sort , nor any exclusive privilege.

[18 AAC 50.350(b)(3), 1/18/97 & 18 AAC 50.345(a) & (g), 5/3/02]

55. The Permittee shall allow the Department or an inspector authorized by the Department, upon presentation of credentials and at reasonable times with the consent of the owner or operator to

55.1 enter upon the premises where a source subject to the permit is located or where records required by the permit are kept;

55.2 have access to and copy any records required by the permit;

55.3 inspect any facility, equipment, practices, or operations regulated by or referenced in the permit; and

55.4 sample or monitor substances or parameters to assure compliance with the permit or other applicable requirements.

[18 AAC 50.350(b)(3), 1/18/97 & 18 AAC 50.345(a) & (h), 5/3/02]

Section 11. Permit As Shield from Inapplicable Requirements

In accordance with AS 46.14.290, and based on information supplied in the facility application, this section of the permit contains the requirements determined by the Department not to be applicable to the **Bernice Lake Power Plant**.

56. Table 2 identifies the sources that are not subject to the specified requirements at the time of permit issuance. If any of the requirements listed in Table 2 becomes applicable during the permit term, the Permittee shall comply with such requirements on a timely basis including, but not limited to, providing appropriate notification to EPA, obtaining a construction permit and/or an operating permit revision.

Table 2 - Permit Shields Granted.

Non Applicable Requirements	Reason for non-applicability
Facility Wide	
40 CFR 82 Subpart B	Facility and its employees do not perform service on motor vehicle air conditioners, for consideration or otherwise.
40 CFR 82 Subpart F	Facility does not contain commercial, industrial, or comfort air conditioning appliances containing ozone-depleting substances used as refrigerant.
40 CFR 60.7(a)(5), (a)(7)	This facility is not required to have and does not have a CMS.
40 CFR 60.7(c)	This facility is not required to have and does not have a CMS.
40 CFR 60.7(d), (e)	This facility is not required to have and does not have a CMS.
40 CFR 60.8(a)	Requirement applies only at time of construction and does not recur.
40 CFR 60.13	This facility is not required to have and does not have a CMS.
40 CFR 60.332(c)-(h)	Facility does not contain any sources potentially subject to these requirements.
40 CFR 60.332(j)	Requirement does not apply because sources are electric utility stationary gas turbines.
40 CFR60.332(k), (l)	Facility does not contain any sources potentially subject to these requirements.
40 CFR 60.333(a)	The Permittee has chosen to show compliance with the NSPS Subpart GG Sulfur Standard by compliance with 40 CFR 60.333(b).
40 CFR 60.334(a)	Facility does not use water injection to control NOx emissions from gas turbines.
40 CFR 60.334(b)(1)	Facility is not supplied with fuel from bulk storage tanks.

Non Applicable Requirements	Reason for non-applicability
40 CFR 60.334(c)	Requirement only applies to reporting under § 60.7(c), and facility not subject to reporting under that section.
40 CFR 60.335(b) and 60.335(c)	Requirements apply only at time of construction/reconstruction and do not recur.
18 AAC 50.050	The facility sources do not include any incinerators
18 AAC 50.055(a)(2)-(a)(9)	The facility does not contain any sources subject to these opacity standards.
18 AAC 50.055(b)(2)-(b)(6)	The facility does not contain any sources subject to these particulate standards.
18 AAC 50.055(d)-(f)	The facility does not contain any sources subject to these sulfur standards.
18 AAC 50.070	Facility contains no marine vessels.
18 AAC 50.075	The facility sources do not contain any wood-fired heating devices.
40 CFR Part 63	Not an applicable requirement. There are no affected sources under 40 CFR Part 63 or in any subpart of Part 63.
Source ID 1	
40 CFR 60 Subpart GG	Turbine #2 was constructed in 1971 and has not been modified or reconstructed at any point after October 3, 1977.

[18 AAC 50.350(l), 1/18/97]

Section 12. Visible Emissions Forms

Visible Emissions Field Data Sheet

Certified Observer: _____

Company & Facility:

Location:

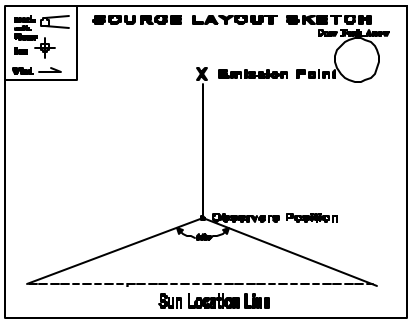
Test No.: Date:

Source:

Production Rate/Operating Rate:

Unit Operating Hours:

Hrs. of observation:



Clock Time	Initial				Final
Observer location Distance to discharge Direction from discharge					
Height of observer point					
Background description					
Weather conditions Wind Direction					
Wind speed Ambient Temperature					
Relative humidity Sky conditions: (clear, overcast, % clouds, etc.)					
Plume description: Color					
Distance visible					
Water droplet plume? (Attached or detached?)					
Other information					

Visible Emissions Observation Record

Page ___ of ___

Company & Facility _____ Certified Observer_____

Test Number _____ Clock time_____

Date:		Visibility reduction every 15 Seconds (Opacity)				Steam Plume (check if applicable)		Comments
Hr	Min	0	15	30	45	Attached	Detached	

Additional information:

_____ _____

Observer Signature and Date Certified By and Date

Data Reduction:

Duration of Observation Period (minutes) _____ Duration Required by Permit (minutes)_____

Number of Observations _____ Highest Six –Minute Average Opacity (%)_____

Number of Observations exceeding 20 % _____

In compliance with three-minute aggregate opacity limit? (Yes or No) _____

In compliance with six-minute opacity limit? (Yes or No) _____

Average Opacity Summary

Set Number	Time Start—End	Opacity	
		Sum	Average

Section 13. ADEC Notification Form

Fax this form to: (907) 269-7508 Telephone: (907) 269-8888

Chugach Electric Association, Inc. _____
Company Name

Bernice Lake Power Plant _____
Facility Name

Reason for notification:

❑ **Excess Emissions**
If you checked this box
Fill out section 1

❑ **Other Deviation from Permit Condition**
If you checked this box
fill out section 2

When did you discover the Excess Emissions or Other Deviation:
Date:__/__/__ Time:__:__

Section 1. Excess Emissions

(a) Event Information (Use 24-hour clock)**:**

	START Time**:** (hr:min):	**END** Time:	**Duration**
Date:	:	:	:
Date: _____	_____:_____	_____:_____	_____:_____
		Total:	_____:_____

(b) Cause of Event (Check all that apply)**:**

❑ START UP ❑ UPSET CONDITION ❑ CONTROL EQUIPMENT
❑ SHUT DOWN ❑ SCHEDULED MAINTENANCE ❑ OTHER _____

Attach a detailed description of what happened, including the parameters or operating conditions exceeded.

(c) Sources Involved:

Identify each emission source involved in the event, using the same identification number and name as in the permit. List any control device or monitoring system affected by the event. Attach additional sheets as necessary.

Source ID No.	Source Name	Description	Control Device

(d) Emission Limit Potentially Exceeded

Identify each emission standard potentially exceeded during the event. Attach a list of ALL known or suspected injuries or health impacts. Identify what observation or data prompted this report. Attach additional sheets as necessary.

Permit Condition	Limit	Emissions Observed

(e) Excess Emission Reduction:

Attach a description of the measures taken to minimize and/or control emissions during the event.

(f) Corrective Actions:

Attach a description of corrective actions taken to restore the system to normal operation and to minimize or eliminate chances of a recurrence.

(g) Unavoidable Emissions:

Do you intend to assert that these excess emissions were unavoidable?
❑ YES ❑ NO
Do you intend to assert the affirmative defense of 18 AAC 50.235?
❑ YES ❑ NO

Section 2. Other Permit Deviations

(a) Sources Involved:

Identify each emission source involved in the event, using the same identification number and name as in the permit. List any control device or monitoring system affected by the event. Attach additional sheets as necessary.

Source ID No.	Source Name	Description	Control Device

(b) Permit Condition Deviation:

Identify each permit condition deviation or potential deviation. Attach additional sheets as necessary.

Permit Condition	Potential Deviation

(c) Corrective Actions:

Attach a description of actions taken to correct the deviation or potential deviation and to prevent recurrence.

Based on information and belief formed after reasonable inquiry, I certify that the statements and information in and attached to this document are true, accurate, and complete.

Printed Name: Signature: Date:

Alaska Department of Environmental Conservation

Air Permits Program

March 20, 2003

Chugach Electric Association, Inc.

Bernice Lake Power Plant

STATEMENT OF BASIS

of the terms and conditions for

Permit No. 086TVP01

Prepared by Christian Beaudrie

INTRODUCTION

This document sets forth the statement of basis for the terms and conditions of Operating Permit No. 086TVP01.

FACILITY IDENTIFICATION

Section 1 of Operating Permit No. 086TVP01 contains information on the facility as provided in the Title V permit application.

The facility is owned and operated by Chugach Electric Association, and Chugach Electric Association, Inc. is the Permittee for the facility's operating permit. The SIC code for this facility is 4911.

This facility is a power generation plant with three natural gas-fired turbines, each of which is housed separately. The facility also utilizes several gas-fired heaters and diesel-fired engines.

The turbines are fueled by gas from nearby fields, which is purchased from Marathon Oil Company. The large building located near the center of the property formerly housed Turbine Unit No. 1, which was removed from service in 1995.

SOURCE INVENTORY AND DESCRIPTION

Table 1 of Operating Permit No. 086TVP01 contains information on the sources regulated by this permit as provided in the application. The table is provided for informational and identification purposes only. Specifically, the source rating/size provided in the table is not intended to create an enforceable limit. The major sources at this facility are three turbines that burn gas fuel, and were installed or commenced construction in 1971, 1978 and 1982, respectively. Turbine units no. 3 or 4 (Source ID(s) 2 and 3) were installed after the 40 C.F.R. 60, Subpart GG applicability date (October 3, 1977).

In 1995, a gas turbine was removed from service. The unit was a dual-fuel Westinghouse Model 101 which was installed in 1963 and had a generating capacity of 8.85 MW.

EMISSIONS

Section 2 of Operating Permit No. 086TVP01 contains emission information as provided in the Title V application. A summary of the potential to emit (PTE)[6] and assessable PTE as indicated in the application from the Bernice Lake Power Plant is shown in the table below.

[6] *Potential to Emit or PTE* means the maximum quantity of a release of an air contaminant, considering a facility's physical or operational design, based on continual operation of all sources within the facility for 24 hours a day, 365 days a year, reduced by the effect of pollution control equipment and approved state or federal limitations on the capacity of the facility's sources or the facility to emit an air contaminant, including limitations such as restrictions on hours or rates of operation and type or amount of material combusted, stored, or processed as defined in AS 46.14.990(21), effective 1/18/97.

Table A - Emissions Summary, in Tons Per Year (TPY)

Pollutant	NO_x	CO	PM-10	SO_2	VOC	HAPs	Total
PTE	1319.8	362.5	37.8	19.2	16.9	4.3	1761.0
Assessable PTE	1319.8	362.5	37.8	19.2	21.2		1761.0

The assessable PTE listed under condition 1.1 is the sum of the emissions of each individual regulated air contaminant for which the facility has the potential to emit quantities greater than 10 TPY. The emissions listed in Table A are estimates that are for informational use only. The listing of the emissions does not create an enforceable limit to the facility. SOx emissions are calculated using an assumed gas H_2S concentration of 1 ppm.

For criteria pollutants, emissions are as calculated using EPA AP-42 factors and GRI-HAPCalc 3.01 software, taking into account permit limitations on emissions.

The Department calculated HAP emissions using GRI-HAPCalc® 3.01.

Table B – PSD Account, in Tons Per Year (tpy)

1995 Changes	NO_x	CO	PM-10	SO_2	VOC
Turbine # 1 (Removed)	(196)	(2,402.1)	(183.6)	(44.4)	(10.0)

The emission decreases shown in Table B must be included when determining the applicability of 18 AAC 50.300(h) to any future emission increases at the facility.

BASIS FOR REQUIRING AN OPERATING PERMIT

Section 2 of Operating Permit No. 086TVP01 lists the regulatory classifications of the Bernice Lake Power Plant. This facility is classified under 18 AAC 50.300(b)(2) as having the potential to violate one or more of the ambient air quality standards because it contains fuel-burning equipment with a rated capacity of 100MMBtu/hour or more. This facility is classified as a Prevention of Significant Deterioration (PSD) Major Facility as defined in 18 AAC 50.300(c)(1), because it has the potential to emit 250 TPY or more of NOx and CO.

This facility requires an operating permit under 18 AAC 50.325(b)(1), (b)(3), and (c), because it emits or has the potential to emit 100 TPY or more of a regulated contaminant, and is a facility that contains a source subject to one or more of the standards adopted by reference in 18 AAC 50.040(a) – (c).

Alaska regulations require operating permit applications to include identification of "regulated sources." As applied to Bernice Lake Power Plant, the state regulations require a description of:

⇒ Each source regulated by a standard in 18 AAC 50.055, Industrial Processes and Fuel Burning Equipment, under18 AAC 50.335(e)(4)(C);

⇒ Each source subject to a standard adopted by reference in 18 AAC 50.040 under 18 AAC 50.335(e)(2); and

⇒ Sources subject to requirements in an existing Department permit 18 AAC 50.335(e)(5).

The emission sources at Bernice Lake Power Plant classified as "regulated sources" according to the above Department regulations are listed in Table 1 of Operating Permit No. 086TVP01.

CURRENT AIR QUALITY PERMITS

Previous Air Quality Permit to Operate

The most recent permit issued for this facility is permit-to-operate number 9423-AA014 amendment #1. This permit-to-operate include all construction authorizations issued through, since it was issued before January 18, 1997. All facility-specific requirements established in this previous permit are included in the new operating permit as described in Table C.

Construction Permits

No construction permits have been issued for this facility after January 18, 1997 (the effective date of the new divided operating and construction-permitting program).

Title V Operating Permit Application History

The owner or operator submitted an application on October 9, 1997.

COMPLIANCE HISTORY

The facility has operated at its current location since 1963. Review of the permit files for this facility, which includes the past inspection reports indicate a facility generally operating in compliance with its operating permit.

FACILITY-SPECIFIC REQUIREMENTS CARRIED FORWARD

State of Alaska regulations in 18 AAC 50.350(d)(1)(D) require that an operating permit include each facility-specific requirement established in a prior construction permit. Table C below lists the construction permit condition that established a requirement in Operating Permit No. 9423-AA014 and the new condition in Operating Permit No. 086TVP01 that carries the old requirement into the new permit.

Table C - Comparison of Pre-January 18, 1997 Permit No. 9423-AA014Conditions to Operating Permit No. 086TVP01 Conditions[7]

Permit No. 9423-AA014 Condition number	Description of Requirement	Permit No. 086TVP01 Condition Number	How condition was revised
Exhibit A	Source Inventory	Table 1 - Source Inventory	No change.
4 and Exhibit B	Burn natural gas only in Source IDs 1 - 3	6	No change.
Exhibit B	PM 12 lb/hr limit for Source IDs 2 & 3	9	Limit was carried forward and the 48.2 tpy limit from EPA PSD permits was added to this condition.
Exhibit B	SO_2 150 ppmv, corrected to 15%, dry basis	16	No change in SOx limit. Permit No. 9423-AA014 mistakenly identifies this SO_2 limit as being required by PSD Permit No. PSD-X83-02, but in fact the 150 ppmv limit is from NSPS Subpart G.
Exhibit B	NO_x 130 lb/hr and 84 ppmv limits for Source IDs 2 & 3	10	Limits were carried forward and the 569 tpy limit from EPA PSD permits was added to this condition.
12 and Exhibit D	Process monitors shall be installed, operated, and maintained	6 & 8	Fuel consumption, operating hours and kilowatt-hours requirements were carried forward.
1	Not burn more than 2 Mgal of distillate fuel/yr in Source IDs 1 - 3	None	Replaced with a requirement to burn only natural gas in Source IDs 1 - 3.

[7] This table does not include all standard and general conditions

STATEMENT OF BASIS FOR THE PERMIT CONDITIONS

The state and federal regulations for each condition are cited in Operating Permit No. 086TVP01.

Conditions 1 - 2, Emission Fees

Applicability: The regulations require all permits to include due dates for the payment of fees and any method the Permittee may use to re-compute assessable emissions.

Factual Basis: These standard conditions require the Permittee to pay fees in accordance with the Department's billing regulations. The billing regulations set the due dates for payment of fees based on the billing date.

The default assessable emissions are emissions of each air contaminant authorized by the permit (AS 46.14.250(h)(1)(A)). Air contaminant means any regulated air contaminant and any hazardous air contaminant. Therefore, assessable emissions under AS 46.14.250(h)(1)(A) means the **potential** to emit any air contaminant identified in the permit, including those not specifically limited by the permit. For example, hydrogen chloride (HCl) emissions from an incinerator are assessable emissions because they are a hazardous air contaminant, even if there is currently no emission limit on HCl for that class of incinerator.

The conditions also describe how the Permittee may calculate **actual** annual assessable emissions based on previous actual annual emissions. According to AS 46.14.250(h)(1)(B), assessable emissions are based on each air contaminant. Therefore, fees based on actual emissions must also be paid on any contaminant emitted whether or not the permit contains any limitation of that contaminant.

This standard condition specifies that, unless otherwise approved by the Department, calculations of assessable emission based on actual emissions use the most recent previous calendar year's emissions. Since each current year's assessable emission are based on the previous year, the Department will not give refunds or make additional billings at the end of the current year if the estimated emissions and current year actual emissions do not match. The Permittee will normally pay for actual emissions - just with a one-year time lag.

Projected actual emissions may differ from the previous year's actual emissions if there is a change at the facility, such as changes in equipment or an emission rate from existing equipment.

If the Permittee does not choose to annually calculate assessable emissions, emissions fees will be based on “potential to emit” (PTE).

The PTE set forth in the condition is based on fuel gas with a sulfur content of 60 ppm H_2S by volume. If the actual sulfur content of the fuel is greater than these assumptions, the assessable emissions calculations provided by the Permittee should reflect the actual sulfur content. The change in these values may result in SO_2 emissions that could trigger PSD.

Condition 3, Visible Emissions Standard

Applicability: This regulation applies to operation of all fuel-burning equipment in Alaska. Source ID(s) 1 – 3 are fuel-burning equipment.

Factual basis: Condition 3 requires the Permittee to comply with the federal and the state visible emission standards applicable to fuel-burning equipment and incinerators. The Permittee shall not cause or allow the equipment to violate these standards.

This condition has recently been adopted into regulation as a standard condition.

Monitoring – The monitoring of gas fired sources for visible emissions is waived, i.e. no source testing will be required. The Department has found that natural gas fired equipment inherently has negligible PM emissions. However, the Department can request a source test for PM emissions from any smoking equipment.

Reporting – The Permittee must annually certify that only gaseous fuels are used in the equipment.

Condition 4, Particulate Matter (PM) Standard

Applicability: The PM standard applies to operation of all fuel burning equipment in Alaska. Source ID(s) 1 - 3 are fuel-burning equipment. The SIP standard for PM applies to all fuel-burning equipment because it is contained in the federally approved SIP dated October 1983.

Factual basis: Condition 4 requires the Permittee to comply with the state PM (also called grain loading) standard applicable to fuel-burning equipment. The Permittee shall not cause or allow fuel-burning equipment to violate this standard.

The only necessary monitoring, recordkeeping and reporting to assure compliance with the opacity standard is that the permittee certify that only fuel gas is fired in these sources. Gas fired sources typically do not exhibit visible emissions and therefore more stringent monitoring of visible emissions is not required by the state.

Monitoring – The monitoring of gas fired sources for particulate matter is waived, i.e. no source testing will be required. The Department has found that natural gas fired equipment inherently has negligible PM emissions. However, the Department can request a source test for PM emissions from any smoking equipment.

Reporting – The Permittee must annually certify that only gaseous fuels are used in the equipment.

Condition 5, Sulfur Compound Emissions

Applicability: The sulfur emissionstandard applies to operation of all fuel-burning equipment in the State of Alaska. Source ID(s) 1 - 3 are fuel-burning equipment. The SIP standard for sulfur dioxide applies because it is contained in the federally approved SIP dated October 1983.

Factual basis: The condition requires the Permittee to comply with the sulfur emission standard applicable to fuel-burning equipment. The Permittee may not cause or allow the affected equipment to violate this standard.

Sulfur dioxide comes from the sulfur in the liquid, hydrocarbon fuel (e.g. diesel or No. 2 fuel oil). Fuel containing no more than 0.75 percent sulfur by weight will always comply with the emission standard.

Fuel sulfur testing will verify compliance.

Fuel gas sulfur is measured as hydrogen sulfide (H_2S) concentration in ppm by volume (ppmv). Calculations[8] show that fuel gas containing no more than 4000 ppm H_2S will always comply with this emission standard. This is true for all fuel gases, even with no excess air.

Equations to calculate the exhaust gas SO_2 concentrations resulting from the combustion of fuel gas were not included in this permit. Fuel gas with an H_2S concentration of even 10 percent of 4000 ppm is currently not available in Alaska and is not projected to be available during the life of this permit.

Recordkeeping - For Diesel fuel the Permittee is required to record the fuel sulfur content or fuel grade of each shipment and all material balance calculations, and for fuel gas, the H_2S concentration of the fuel gas.

Reporting – The Permittee is required to report as "state" excess emissions whenever the fuel combusted causes sulfur compound emissions to exceed the standards in this condition. The Permittee is required to include the material balance calculations for fuel oil in the excess emissions report.

The Permittee is required to include copies of the records mentioned in the previous paragraph with the facility operating report.

Condition 6 - 8, Conditions carried forward from previous permits

Applicability: These requirements apply because they were established in the previous Permit No. 9423-AA014.

Factual basis: The conditions require that the permittee burn only natural gas in Source ID(s) 1 – 3, and that a system for monitoring kilowatt-hours and hours of operation is maintained. These requirements ensure that the facility will not exceed emission limits stated in previous conditions.

Condition 9 & 10, Conditions carried forward from previous permits

Applicability: These requirements apply because they were established in a previous Permit No. 9423-AA014 and PSD Permit Nos. PSD-X83-02 & PSD-X83-07.

Factual basis: The conditions carried forward state limits for emissions of particulate matter and nitrogen oxides for Source ID(s) 2 and 3. The permittee is required to demonstrate compliance with these limits through the monitoring, recordkeeping, and reporting required in these conditions.

Condition 11 – 14, NSPS Subpart A Requirements

Applicability The Department has incorporated by reference the NSPS effective July 1,

[8] See ADEC Air Permits Web Site at http://www.state.ak.us/dec/dawq/aqm/newpermit.htm, under "Stoichiometric Mass Balance Calculations of Exhaust Gas SO2 Concentration."

2001, for specific industrial activities, as listed in 18 AAC 50.040[9].

Most (with the exception of some storage tanks) sources subject to an NSPS are subject to Subpart A. At this facility, Source IDs 2 & 3 are subject to NSPS Subpart GG and therefore subject to Subpart A.

The Permittee has already complied with the notification requirements in 40 C.F.R. 60.7 (a)(1) - (4) for Source ID(s) 2 & 3. However, the Permittee is still subject to these requirements in the event of a new NSPS source or reconstruction of one of these sources.

The Permittee is required under 40 CFR 60 Subpart A to notify the EPA and the Department of any proposed replacement of an affected facility (40 C.F.R. 60.15), Source ID(s) 2 & 3, in the event of a proposed replacement of these sources.

Condition 11 - Start-up, shutdown, or malfunction record maintenance requirements in 40 C.F.R. 60.7(b) are applicable to all NSPS sources subject to Subpart A.

Recordkeeping requirements in 40 C.F.R. 60.7(f) are applicable to all NSPS sources. (Satisfied by condition 41)

Condition 12 - Good air pollution control practices in 40 C.F.R. 60.11 are applicable to all NSPS sources subject to Subpart A (Source ID(s) 2 & 3).

Condition 13 states that any credible evidence may be used to demonstrate compliance or establishing violations of relevant NSPS standards for Source ID(s) 2 & 3.

[9] EPA has not delegated to the Department the authority to administer the NSPS program as of the issue date of this permit.

Condition 14 - Concealment of emissions prohibitions in 40 C.F. R. 60.12 are applicable to Source IDs 2 & 3.

Factual Basis: Subpart A contains the general requirements applicable to all affected facilities (sources) subject to NSPS. In general the intent of NSPS is to provide technology-based emission control standards.

Conditions 15 -16, NSPS Subpart GG Requirements

Applicability: NSPS Subpart GG applies to stationary gas turbines with a heat input at peak load (maximum load at 60 percent relative humidity, 59 degrees F, and 14.7 psi) equal to or greater than 10.7 gigajoules per hour (10 MMBtu/hr), based on the lower heating value of the fuel fired and constructed, modified, or reconstructed after October 3, 1977.

Factual Basis: The turbines operated at the Bernice Lake Power Plant facility are considered 'electric utility stationary turbines' for the purposes of NSPS Subpart GG. As a result, Source ID(s) 2 & 3 are subject to 40 C.F.R. 60.332(a)(1). These conditions incorporate NSPS Subpart GG NO_X emission and sulfur compound limits. The Permittee may not allow equipment to violate these standards.

NO_X Standard: For a turbine subject to 40 C.F.R. 60.332(a)(1), the NO_X standard is determined by the following equation:

$$STD_{NOX} = 0.0075(14.4/Y) + F$$

Comment: This is for electric utility stationary gas turbines. Choose the appropriate formula.

where,

STD_{NOX} = allowable NO_X emissions (percent by volume at 15 percent oxygen and on a dry basis)

Y = manufacturer's maximum rated heat input (kJ/W-hr), or actual measured heat rate based on lower heating value of fuel as measured at actual peak load for the affected facility. The value of Y shall not exceed 14.4 kJ/W-hr

F = NO_X emissions allowance for fuel bound nitrogen, percent by volume, **assumed to be zero for Alaska fuel**.

The manufacture's heat rate for Source ID(s) 2 & 3 is 12.86 kJ/W-hr. Assuming fuel bound nitrogen of zero, the NO_X standard is 0.0075(14.4/12.86) + 0 = 84 ppmv for Source ID(s) 2 & 3.

SO_2 Standard: The Permittee is required to comply with one of the following sulfur requirements for Source ID(s) 1 through 13 (turbines):

(1) do not cause or allow SO_2 emission in excess of 0.015 percent by volume, at 15 percent O_2 and on a dry basis (150 ppmv), or

(2) do not cause or allow the sulfur content for the fuel burned in Source ID(s) 2 & 3 to exceed 0.8 percent by weight .

Gas turbines exempted from NSPS Subpart GG emission standards are as provided in 40 CFR 60.332(e) – (l).

Condition 15.1 - 15.3, NO_X Monitoring, Recordkeeping, and Reporting

Applicability: Periodic monitoring is included in condition 15.1. This additional monitoring is necessary to ensure that turbine emissions stay below the NSPS NO_X standard.

Factual basis: The Department does not have enough information to make categorical determinations that certain types of turbines, or turbines with emission test results below a certain percentage of the Subpart GG NO_x emission limit will inherently comply with the Subpart GG limit at all times and will never need additional testing. After a sufficient body of NO_x data is gathered under monitoring conditions for compliance with 40 C.F.R. 60, Subpart GG, the Department may find that it has enough information to make such categorical determinations. In that event, the Department would revise the NO_x monitoring conditions. The Department may determine that to assure compliance it is necessary to retain or increase the current monitoring frequency.

These conditions do not include the initial NSPS performance test requirements. If a turbine under this permit is still subject to the performance test requirement of 40 C.F.R. 60.8, a source specific condition will be necessary.

The intent of these conditions is that turbines or groups of turbines be initially tested on a 5-year cycle. If no testing is required during the permit term, and if the same condition were used in the renewal permit initial testing could be on a 10-year testing cycle. After the first testing cycle, the Department intends to re-evaluate the necessary monitoring frequency.

The condition does not state how load must be measured. For some turbines it may be possible to directly measure load as either mechanical or electrical output. For others, it may be necessary to calculate load indirectly based on measurements of other parameters. The Department is not attempting to dictate what method is most appropriate through the permit condition, but should evaluate the adequacy of methods of calculating load based on the load monitoring proposed by the Permittee.

Subpart GG defines "emergency gas turbine[10]" and exempts turbines meeting that definition from the GG emission standards. Some turbines may be operated as standby equipment but not meet the definition of emergency turbine, so the Department has added a Method 20 monitoring threshold of 400 hours per 12 month. For turbines expected to operate less than 400 hours the Department has also added recordkeeping for hours of operation. The Department does not intend to require the Permittee to operate a turbine solely for the purpose of testing.

The condition requires testing at a range of loads, consistent with the performance test requirements in Subpart GG, that is, test at 30, 50, 75, and 100 percent load. If testing at these four loads is not reasonable, the condition allows the Permittee to propose to the Department what test loads will be reasonable and adequate, and the Department will have the responsibility to make a finding on that proposal. If EPA has already approved alternative test loads for the initial performance test the Department would allow those test loads if the information that went into that decision were still representative of the turbine operation.

In condition 15.1c(iii)(A)(iii), the Department considers "fuel type" to mean, for liquid fuels

[10] *Emergency Gas Turbine* means any stationary gas turbine that operates as a mechanical or electrical power source only when the primary power source for a facility has been rendered inoperable by an emergency situation, as defined in 40 C.F.R. 60.331(e), effective 7/1/01.

a type of fuel as described in an ASTM or similar fuel specification.

Load measurements or load calculations from load surrogate measurements are for one-hour periods. The intent is to match the averaging period for the test method. Method 20 identifies a number of traverse points that vary with the size of the stack. From these points the tester is to choose at least 8 points for NO_x measurements. The time at each point is to be at least one minute plus the average response time of the instrument. The recorded value is the average steady state response. Presumably, the steady state response would exclude some or all of the response time of the instrument. Three runs are to be done at each test load.

The three runs would represent 24 minutes of measurement time or more. A one-hour average load is therefore a reasonable approximation of a load period corresponding to the test method.

Condition 16.1 - 16.3, SOx Monitoring, Recordkeeping, and Reporting

Applicability: This condition incorporates NSPS Subpart GG SOx emission and sulfur compound limits. The Permittee may not allow equipment to violate these standards.

Factual Basis: Monitoring, recordkeeping, and reporting requirements have been carried forward from an EPA Alternative Monitoring Plan granted on 2/5/97 to the Permittee. The requirement for quarterly monitoring at the facility has been met, and the Permittee is now required to monitor fuel sulfur content semi-annually.

Conditions 17- 20, Insignificant Sources

Applicability: These general emission standards apply to all industrial processes fuel-burning equipment, and incinerators regardless of size.

Factual basis: The conditions re-iterate the general standards and require compliance for insignificant sources. The Permittee may not cause or allow their equipment to violate these standards. Insignificant sources are not listed in the permit unless specific monitoring, recordkeeping and reporting are necessary to ensure compliance.

The Department finds that the insignificant sources at this facility do not need specific monitoring, recordkeeping and reporting to ensure compliance under these conditions.

Condition 17 requires certification that the sources did not exceed state emission standards during the previous year and did not emit any prohibited air pollution.

State air quality regulations adopted effective May 3, 2002 allow for an average six minute opacity observation. The existing regulation, limiting opacity to no more than 20% for more than 3 minutes in any one hour, is included because EPA Region X has not formally approved the changed opacity regulation as part of Alaska's State Implementation Plan (SIP).

Condition 21, Asbestos NESHAP

Applicability: The asbestos demolition and renovation requirements apply if the Permittee engages in asbestos demolition or renovation.

Factual Basis: The condition requires the Permittee to comply with asbestos demolition or renovation requirements in 40 C.F.R. 61, Subpart M. Because these regulations include adequate monitoring and reporting requirements and because the Permittee is not currently

engaged in such activity, simply citing the regulatory requirements is sufficient to ensure compliance with these federal regulations.

Condition 22, Refrigerant Recycling and Disposal

Applicability: Applies if the Permittee engages in the recycling or disposal of certain refrigerants.

Factual Basis: The condition requires the Permittee to comply with the standards for recycling and emission reduction of refrigerants set forth in 40 C.F.R. 82, Subpart F, that will apply if the Permittee uses certain refrigerants. Because these regulations include adequate monitoring and reporting requirements and because the Permittee is not currently engaged in such activity, simply citing the regulatory requirements is sufficient to ensure compliance with this federal regulation.

Condition 23, Good Air Pollution Control Practice

Applicability: Applies to all sources, **except** NSPS regulated sources, i.e., except Source ID(s) 2 & 3.

Factual basis: The condition requires the Permittee to comply with good air pollution control practices for all sources.

Maintaining and operating equipment in good working order is fundamental to preventing unnecessary or excess emissions. Standard conditions for monitoring compliance with emission standards are based on the assumption that good maintenance is performed. Without appropriate maintenance, equipment can deteriorate more quickly than with appropriate maintenance. If appropriate maintenance is not applied to the equipment, the Department may have to apply more frequent periodic monitoring requirements (unless the monitoring is already continuous) to ensure that the monitoring results are representative of actual emissions.

The Permittee is required to keep maintenance records to show that proper maintenance procedures were followed, and to make the records available to the Department. The Department may use these records as a trigger for requesting source testing if the records show that maintenance has been deferred.

Condition 24, Dilution

Applicability: This state regulation applies to the Permittee because the Permittee is subject to emission standards in 18 AAC 50.

Factual Basis: The condition prohibits the Permittee from diluting emissions as a means of compliance with any standard in 18 AAC 50.

Condition 25, Reasonable Precautions to Prevent Fugitive Dust

Applicability: Bulk material handling requirements apply to the Permittee because the Permittee will engage in bulk material handling, transporting, or storing; or will engage in industrial activity at the facility.

Factual Basis: The underlying regulation, 18 AAC 50.045(d), requires the Permittee to take reasonable action to prevent particulate matter (PM) from being emitted into the ambient air.

Condition 26, Stack Injection

Applicability: Stack injection requirements apply to the facility because the facility contains a stack or source constructed or modified after November 1, 1982.

Factual Basis: The condition prohibits the Permittee from releasing materials other than process emissions, products of combustion, or materials introduced to control pollutant emissions from a stack (i.e. disposing of material by injecting it into a stack). No specific monitoring for this condition is practical. Compliance is ensured by inspections, because the source or stack would need to be modified to accommodate stack injection.

Condition 27, Open Burning

Applicability: The open burning state regulation in 18 AAC 50.065 applies to the Permittee if the Permittee conducts open burning at the facility.

Factual Basis: The condition requires the Permittee to comply with the regulatory requirements when conducting open burning at the facility.

An open burn approval for firefighter training has been granted to the Permittee for the period of August 31st, 2001 to September 1st, 2006. This approval outlines the requirements for firefighter training to be conducted at the Bernice Lake Power Plant facility. Should the permittee decide to conduct firefighter training using a greater quantity of fuel than requested in the Open Burning Approval request letter to the Department, a revised approval must be issued.

Monitoring, recordkeeping, and reporting of scheduled training is outlined in this condition. Additional monitoring is achieved through condition 28, which requires a record of complaints.

Condition 28, Air Pollution Prohibited

Applicability: Air Pollution Prohibited requirements apply to the facility because the facility will have emissions.

Factual Basis: The condition prohibits the Permittee from causing any emission which is injurious to human health or welfare, animal or plant life, or property, or which would unreasonably interfere with the enjoyment of life or property. While the other permit conditions and emissions limitation should ensure compliance with this condition, unforeseen emission impacts can cause violations of this standard. These violations would go undetected except for complaints from affected persons. Therefore, to monitor compliance, the Permittee must monitor and respond to complaints.

The Permittee is required to report any complaints and injurious emissions. The Permittee must keep records of the date, time, and nature of all complaints received and summary of the investigation and corrective actions undertaken for these complaints and to submit copies of these records upon request of the Department.

The Department will determine whether the necessary actions were taken. No corrective actions are necessary if the complaint is frivolous or there is not a violation of 18 AAC 50.110, however this condition is intended to prevent the Permittee from prejudging that complaints are invalid.

Condition 29, Technology-Based Emission Standard

Applicability: Technology Based Emission Standard requirements apply to the facility because the facility contains equipment subject to a technology-based emission standard, such as BACT, MACT, LAER, NSPS or other "technologically feasible" determinations.

Factual Basis: The Permittee is required to take reasonable steps to minimize emissions if certain activity causes an exceedance of any technology-based emission standard in this permit. The conditions of this permit list applicable technology-based emission standards and require excess emission reporting for each standard in accordance with condition 45. Excess emission reporting under condition 45 requires information on the steps taken to minimize emissions. Monitoring of compliance for this condition consists of the report required under condition 45.

Condition 30, Permit Renewal

Applicability: Applies if the Permittee intends to renew the permit.

Factual Basis: The Permittee is required to submit an application for permit renewal by the specific dates applicable to Bernice **Lake Power Plant** as listed in this condition. Monitoring, recordkeeping, and reporting for this condition consist of the application submittal.

Condition 31, Requested Source Tests

Applicability: Applies because this is a standard condition to be included in all permits.

Factual Basis: The Permittee is required to conduct source tests as requested by the Department. Monitoring consists of conducting the requested source test.

Conditions 32 - 34, Operating Conditions, Reference Test Methods, Excess Air Requirements

Applicability: Apply because the Permittee is required to conduct source tests by this permit.

Factual Basis: The Permittee is required to conduct source test as set out in conditions 32 through 34. These conditions supplement the specific monitoring requirements stated elsewhere in this permit. Compliance monitoring with conditions 32 through 34 consist of the test reports required by condition 39.

Condition 35, Test Exemption

Applicability: Applies when the source exhaust is observed for visible emissions.

Factual Basis: As provided in 18 AAC 50.345(a), 5/03/02, the requirements for test plans, notifications and reports do not apply to visible emissions observations by smoke readers, except in connection with required particulate matter testing.

Conditions 36 - 39, Test Deadline Extension, Test Plans, Notifications and Reports

Applicability: Apply because the Permittee is required to conduct source test by this permit.

Factual Basis: Standard conditions 18 AAC 50.345(l) - (o) are incorporated through these conditions. These standard conditions supplement specific monitoring requirements stated elsewhere in this permit. The source test itself monitors compliance with this condition.

Condition 40, Particulate Matter (PM) Calculations

Applicability: Applies when the Permittee tests for compliance with the PM standard.

Factual Basis: The condition incorporates a regulatory requirement for PM source tests. This condition supplements specific monitoring requirements stated elsewhere in this permit.

Condition 41, Certification

Applicability: This is a standard condition to be included in all permits. Applies because every permit requires the Permittee to submit reports.

Factual Basis: This condition requires the Permittee to certify all reports submitted to the Department. To ease the certification burden on the Permittee, the condition allows the excess emission reports to be **certified** with the facility report, even though it must still be **submitted** more frequently than the facility operating report. This condition supplements the reporting requirements of this permit.

Condition 42, Submittals

Applicability: Applies because the Permittee is required to send reports to the Department.

Factual Basis: This condition requires the Permittee to send submittals to the address specified in this condition. Receipt of the submittal at the correct Department office is sufficient monitoring for this condition. This condition supplements the reporting requirements of this permit.

Condition 43, Information Requests

Applicability: Applies to all Permittees, and incorporates a standard condition.

Factual Basis: This condition incorporates a standard condition in regulation, which requires the Permittee to submit information requested by the Department. Monitoring consists of receipt of the requested information.

Condition 44, Recordkeeping Requirements

Applicability: Applies because the Permittee is required by the permit to keep records.

Factual Basis: The condition restates the regulatory requirements for recordkeeping, and supplements the recordkeeping defined for specific conditions in the permit. The records being kept provide an evidence of compliance with this requirement.

condition 45, Excess Emission and Permit Deviation Reports

Applicability: Applies when the emissions or operations deviate from the requirements of the permit.

Factual Basis: This condition satisfies two state regulations related to excess emissions - the technology-based emission standard regulation and the excess emission regulation. Although there are some differences between the regulations, the condition satisfies the requirements of each regulation.

The reports themselves and the other monitoring records required under this permit provide monitoring of whether the Permittee has complied with the condition. Please note that there may be additional federally required excess emission reporting requirements.

Condition 46, NSPS and NESHAP Reports

Applicability: Applies to facilities subject to NSPS and NESHAP federal regulations.

Factual Basis: The condition supplements the specific reporting requirements in 40 C.F.R. 60 and 40 C.F.R. 61. The reports themselves provide monitoring for compliance with this condition.

Condition 47, Operating Reports

Applicability: Applies to all permits.

Factual Basis: The condition restates the requirements for reports listed in regulation. The condition supplements the specific reporting requirements elsewhere in the permit. The reports themselves provide monitoring for compliance with this condition.

Condition 48, Annual Compliance Certification

Applicability: Applies to all Permittees.

Factual Basis: This condition specifies the periodic compliance certification requirements, and specifies a due date for the annual compliance certification. The reports themselves provide monitoring for compliance with this condition.

Conditions 49 - 55, Standard Conditions

Applicability: Applies because these are standard conditions to be included in all permits.

Factual Basis: These are standard conditions required for all operating permits.

Condition 56, Permit Shield

Applicability Applies because the Permittee has requested a shield for the applicable requirements listed under this condition.

Factual Basis: Table 2 of Operating Permit No. 086TVP01 shows the permit shields that the Department granted to the Permittee. The following table shows the requests that were denied and the reasons that they were denied. The Department based the determinations on the permit application, past operating permit, construction permits and inspection reports.

Table F - Permit Shields Denied

SHIELD REQUESTED FOR:	REASON FOR SHIELD REQUEST:	REASON FOR REQUEST DENIAL:
Facility-Wide		
40 CFR 82 Subpart F	Facility does not contain commercial, industrial, or comfort air conditioning appliances containing ozone-depleting substances used as refrigerant.	This condition is generally applicable to most facilities, and is intended to prevent the release of refrigerants that may degrade the ozone layer.
40 CFR 60.7(a)(1), (a)(2), (a)(3)	Requirements apply only at time of construction/modification and do not recur.	Requirements apply at time of construction/modification of an existing facility (source).
AQC Permit 9423-AA014, conditions 1 – 3 & 6 – 11 & 13 - 18	Superceded by state regulations	Each facility-specific requirement established in a permit issued before Jan 17, 1997 must be included [18 AAC 50.350(d)(1)(D)]. These conditions however have been replaced by standard conditions in state regulation.
18 AAC 50.045(d)	The facility does not handle bulk materials prone to producing particulate emissions.	This requirement applies to all facilities in the State of Alaska.

Attachment A

Figure 1 --Summary Report -- Excess Emission and Monitoring System Performance

Pollutant (Circle One—SO_2/NO_X/fuel sulfur)
Reporting period dates:
From _____to _____
Company:
Emission Limitation _____
Address:
Monitor Manufacturer and Model No. _____
Date of Latest CMS (CEMS and PEMS) Certification or Audit
_____
Process Unit(s) Description:
Total source operating time in reporting period[1]_____

Emission data summary[1]	CMS (CEMS and PEMS) performance summary[1]
1. Duration of excess emissions in reporting period due to:	1. CMS (CEMS and PEMS) downtime in reporting period reporting period due to:
a. Startup/shutdown _____	a. Monitor equipment malfunctions ____
b. Control equipment problems _____	b. Non-Monitor equipment malfunctions ____
c. Process problems _____	c. Quality assurance calibration ____
d. Other known causes _____	d. Other known causes ____
e. Unknown causes _____	e. Unknown causes ____
2. Total duration of excess emission _____	2. Total CMS (CEMS and PEMS) Downtime ____
3. Total duration of excess emissions X (100) [Total source operating time] _____%[2]	3. [Total CMS (CEMS and PEMS) Downtime] X (100) /[Total source operating time] _____%[2]

[1] For opacity, record all times in minutes. For gases, record all times in hours.
[2] For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS (CEMS or PEMS) downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report described in this condition shall be submitted.

On a separate page, describe any changes since last quarter in CMS, process or controls. I certify that the information contained in this report is true, accurate, and complete.

Name

Signature